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Quality Engineering Test Report

SERIES: 45W TRIPLE OUTPUT OPEN FRAME SWITCHING POWER SUPPLY

SAMPLE: A.PT-45A V1:+5V / 3A V2:+12V / 2A V3:- 5V / 0.3A
B.PT-45B V1:+5V / 3A V2:+12V / 2A V3:- 12V / 0.3A
C.PT-45C V1:+5V / 3A V2:+15V / 1.6A V3:- 15V / 0.3A

NO	TEST ITEM	TEST CONDITION/SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC90~264VAC O/P:FULL LOAD	65VAC~267VAC	P
2	LINE REGULATION	I/P:85~264VAC SPEC: O/P:FULL LOAD A: V1:±1% V2:±2% V3:±1% B: V1:±1% V2:±2% V3:±1% C: V1:±1% V2:±2% V3:±1%	A: V1: 0 % ~ -0.24%; V2: -0.05%0 ~ 0.7%; V3: % ~ -0.12% B: V1: 0 % ~ 0.2%; V2: 0 % ~ 0.7%; V3: 0.04% ~ 0.04% C: V1: 0 % ~ -0.21%; V2: -0.08% ~ 0.74%; V3: 0.04% ~ 0.04%	P
3	LOAD REGULATION	I/P:85~264VAC SPEC: O/P: MIN. TO MAX. LOAD A: V1:±3% V2:±4% V3:±1% B: V1:±3% V2:±4% V3:±1% C: V1:±3% V2:±4% V3:±1%	A: V1: 0.23% ~ 0.0%; V2: 0.49% ~ -0.1%; V3: 0 % ~ 0 % B: V1: 0 % ~ 0.1%; V2: -0.1 % ~ 0.2%; V3: 0.04% ~ 0 % C: V1: -0.36% ~ 0.12%; V2: 0.92% ~ -0.17%; V3: 0.04% ~ 0 %	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: O/P: MIN. TO MAX. LOAD A. V1:±4% V2:±7% V3:±5% B. V1:±4% V2:±7% V3:±5% C. V1:±4% V2:±7% V3:±5%	----	N
5	RIPPLE&NOISE	I/P:230VAC SPEC: O/P: FULL LOAD A: V1:50mV V2:120mV V3:50mV B: V1:50mV V2:120mV V3:100mV C: V1:50mV V2:120mV V3:100mV	A: V1: 12mV V2: 96mV V3: 11mV B: V1: 8mV V2: 28mV V3: 11mV C: V1: 7mV V2: 23mV V3: 11mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:0.7A O/P:FULL LOAD	A:0.536A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:40A O/P: FULL LOAD	A:34.679A	P

		COLD START		
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD	SPEC: V1 : 4.75V~5.5V (-5%~+10%)	A:4.2V~6.1V (-16%~22%)	P
9	SET UP TIME	I/P:230VAC\60Hz O/P:FULL LOAD	SPEC:800mS (V1~V3)	A: V1: 549mS V2: 548mS V3: 546mS	P
10	HOLD UP TIME	I/P:230VAC\60Hz O/P:FULL LOAD	SPEC:20mS MIN.	A: V1: 83.8mS V2: 84.5mS V3: 89.1mS	P
11	EFFICIENCY	I/P:230VAC	SPEC: A:75% B:75% C:75%	A: 76.6% B: 76.9% C 77.09%	P
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING	SPEC:53W~75W	A:68W	P

NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION/SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>13</td><td>OVER VOLTAGE PROTECTION</td><td>I/P:230VAC SPEC:5.75V~6.75VDC
O/P:FULL LOAD ON V1</td><td>A:6.1V</td><td>P</td></tr>
<tr><td>14</td><td>GROUND LEAKAGE CURRENT</td><td>I/P:240VAC SPEC:
L-FG---<0.5mA
N-FG---<0.5mA</td><td>A: L-FG:0.35mA
N-FG:0.35mA</td><td>P</td></tr>
<tr><td>15</td><td>INSULATION RESISTANCE</td><td>SPEC:
O/P-FG 500VDC/50M Ohms MIN.
I/P-O/P 500VDC/50M Ohms MIN.
I/P-FG 500VDC/50M Ohms MIN.</td><td>A: O/P-FG: >100M Ohms
I /P-O/P: >100M Ohms
I /P-FG : >100M Ohms</td><td>P</td></tr>
<tr><td>16</td><td>DIELECTRIC / WITHSTAND VOLTAGE</td><td>SPEC:
I/P- O/P: 3000VAC/ 1 MIN (10mA CUT-OFF)
I/P - FG: 1500VAC/ 1 MIN (10mA CUT-OFF)
O/P - FG : 500VAC/1MIN (10mA CUT-OFF)</td><td>A: NO BREAK
I/P-O/P :3.8mA
I/P-FG :3.2 mA
O/P-FG :2.4 mA</td><td>P</td></tr>
<tr><td>17</td><td>BURNIN TEST</td><td>I/P: 230VAC O/P:FULL LOAD
TA:24.4°C BURN-IN DURATION:1.5hrs</td><td>NO BREAK</td><td>P</td></tr>
<tr><td rowspan="3">18</td><td rowspan="3">ENVIRONMENT TEST</td><td>1.LOW TEMPERATURE TEST
I/P:83VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:-10°C</td><td>A:
AFTER 2 hrs
POWER ON OK</td><td rowspan="3">P</td></tr>
<tr><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230 VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:50°C</td><td>A:
AFTER 3 hrs
NON BREAK</td></tr>
<tr><td>3.ACCELERATED LIFE TEST
I/P:267 VAC O/P:FULL LOAD
POWER ON :3 min POWER OFF :5 sec
AMBIENT TEMPERATURE:85 °C
AMBIENT HUMIDITY:95%</td><td>A:
AFTER 15 hrs
NON BREAK</td></tr>
<tr><td>19</td><td>TEMPERATURE RISE T rise OF PARTS</td><td colspan="2">B: I/P :230VAC AFTER 1.5hrs BURN-IN
O/P :FULL LOAD TA:24.4°C
<table>
<tr><th></th><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr>
<tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>54.4°C</td><td>29.6°C</td></tr>
<tr><td></td><td>Q1</td><td>MAIN TRANSISTER</td><td>65.9°C</td><td>40.9°C</td></tr>
<tr><td></td><td>D1</td><td>CLAMPING DIODE</td><td>72.3°C</td><td>47.3°C</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER</td><td>85.7°C</td><td>60.7°C</td></tr>
<tr><td></td><td>D4</td><td>O/P DIODE</td><td>76.1°C</td><td>51.1°C</td></tr>
<tr><td>*</td><td>D5</td><td>O/P DIODE</td><td>80°C</td><td>55°C</td></tr>
<tr><td></td><td>C22</td><td>O/P FILTER CAPACITOR</td><td>69.6°C</td><td>44.6°C</td></tr>
<tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>55.1°C</td><td>30.1°C</td></tr>
</table></td><td>*
NOTE 1</td></tr>
<tr><td>20</td><td>LIFE CYCLE</td><td colspan="2">SUPPOSE C22 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULLLOAD Ta:25°C Tc_{22}:70.2°C Life time:63448 hrs
I/P:230VAC O/P:FULLLOAD Ta:45°C Tc_{22}:80.6°C Life time:30856 hrs</td><td>P</td></tr>
<tr><td>21</td><td>CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="3">FUSE : CQ 3A/250V UL
BRIDGE DIODE : LT KBJ 408G. (GLASS)
LINE FILTER : TF484 ET-20V
TRANSFOMER : LS ER-28 TF444
POWER SWITCHER : K2545 6A/600V TO-220F
OUTPUT DIODE : BYQ-26-200 10A/200V TO-220F
OUTPUT CAPACITOR : ELNA 820uf/16V 105°C(M) RJH
INPUT CAPACITOR : RNBYCON 100uf/400V 85°C USP
P.C.B : 128mm x 77mm 2 0Z CEM-3 PT-45</td></tr>
<tr><th>DATE</th><th>SAMPLE</th><th>TEST RESULT</th><th>TEST</th><th>APPROVAL</th></tr>
<tr><td>971015</td><td>PT-45A</td><td>.NOTE1WORKING TEMPERATURE>=40°C, OUTPU SHOULD COOLING FAN.</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
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